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PTO/SB/21 (09-04)

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## TRANSMITTAL FORM

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Total Number of Pages in This Submission

23

Application Number

10/648,945

Filing Date

August 26, 2003

First Named Inventor

Guillermo C. Bazan

Art Unit

1637

Examiner Name

RILEY, JEZIA

Attorney Docket Number

51871.000006.UTL

### ENCLOSURES

(Check all that apply)

☐

Fee Transmittal Form

☐

Fee Attached

☐

Amendment/Reply

☐

After Final

☐

Affidavits/declaration(s)

☐

Extension of Time Request

☐

Express Abandonment Request

☒

2 Information Disclosure Statements

☐

Certified Copy of Priority Document(s)

☐

Reply to Missing Parts/  
Incomplete Application

☐

Reply to Missing Parts  
under 37 CFR 1.52 or 1.53

☐

Drawing(s)

☐

Licensing-related Papers

☐

Petition

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Petition to Convert to a  
Provisional Application

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Power of Attorney, Revocation  
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After Allowance Communication to TC

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Appeal Communication to Board  
of Appeals and Interferences

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Appeal Communication to TC  
(Appeal Notice, Brief, Reply Brief)

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Proprietary Information

☐

Status Letter

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Other Enclosure(s) (please identify  
below):

Copies of cited references 1-143, 163-167,  
and 174-218.

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SB/08 Forms (18 pgs).

#### Remarks

The Commissioner is hereby authorized to charge any fees due in connection with this submission, or credit any overpayment to Deposit Account No. 02-4553 in the name of Buchanan Ingersoll Professional Corp.

### SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

Firm Name

Buchanan Ingersoll, 401 West A Street, Suite 1900, San Diego, CA 92101

Signature

*David Maher*

Printed name

David Maher

Date

01-26-05

Reg. No.

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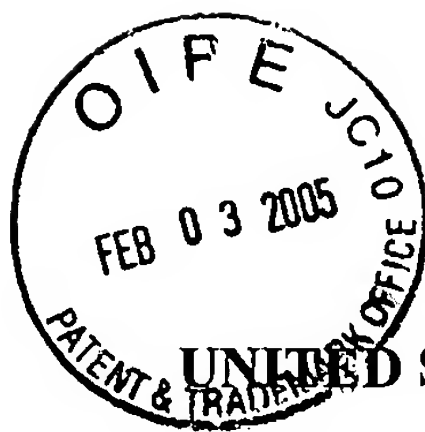
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51871-000006.UTL  
U.S. Patent

**UNITED STATES PATENT AND TRADEMARK OFFICE**

In re the Application of	)	Group Art Unit: 1637
	)	
BAZAN et al.	)	Examiner: RILEY, JEZIA
	)	
Serial No.: 10/648,945	)	Customer. No. 23464
	)	
Filed: August 26, 2003	)	
	)	
For: METHODS AND COMPOSITIONS	)	
FOR DETECTION AND ANALYSIS	)	
OF POLYNUCLEOTIDES USING	)	
LIGHT HARVESTING MULTI-	)	
<u>CHROMOPHORES</u>	)	

**INFORMATION DISCLOSURE STATEMENT UNDER 37 C.F.R. § 1.97-1.98**

Mail Stop Amendment  
Commissioner for Patents  
P. O. Box 1450  
Alexandria, VA 22313-1450

Dear Sir:

This Information Disclosure Statement is being filed prior to receipt of a first Office Action on the merits with respect to the above-captioned application. Thus, it is believed that there is no fee due for filing this paper. However, if it is determined that a fee is due, the Commissioner is hereby authorized to charge the requisite fee, or any fees that may be due in connection with this and the attached papers, or with this application during its entire pendency, or to credit any overpayment, to Deposit Account No. 02-4553.

In accordance with 37 C.F.R. §1.56 and 37 C.F.R. §§1.97-1.98, this Information Disclosure Statement, including Forms PTO-SB/08A (2 pages) and PTO-SB/08B (5 pages) and cited documents, is provided herewith.

The items identified in this Information Disclosure Statement may or may not be "material" pursuant to 37 C.F.R. §1.56. The filing of this Information Disclosure Statement is not an admission by Applicants or Applicants' representatives that any of the documents, singly or in any combination, is material. Nor is it an admission that any of the items identified is

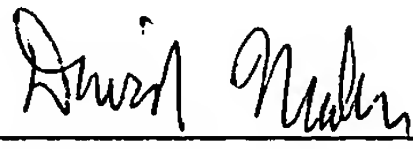
"prior art" against the subject application. Additionally, in accordance with 37 C.F.R. §1.97(h), the filing of this Information Disclosure Statement shall not be construed to mean that a search has been made or that no other information as defined in 37 C.F.R. §1.56(b) exists in addition to those items submitted herewith.

Applicant respectfully requests that the Examiner review the foregoing documents and information and that they be made of record in the file history of the above-captioned application.

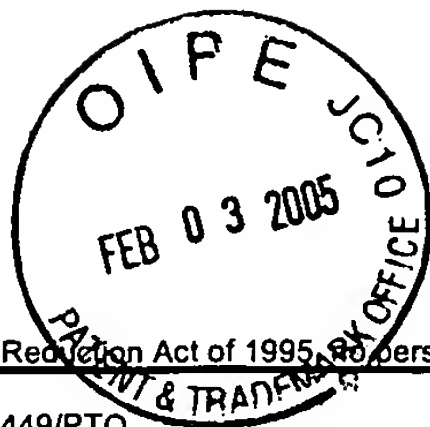
Respectfully submitted,

BUCHANAN INGERSOLL P.C.

Date: January 26, 2005

By:   
David W. Maher, Ph.D  
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PTO/SB/08A (08-03)

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Substitute for form 1449/PTO

**INFORMATION DISCLOSURE  
STATEMENT BY APPLICANT**

(Use as many sheets as necessary)

Sheet

1

of

7

**Complete if Known**

Application Number	10/648,945
Filing Date	August 26, 2003
First Named Inventor	Guillermo C. Bazan
Art Unit	1637
Examiner Name	Riley, Jezia
Attorney Docket Number	51871-000006

**U. S. PATENT DOCUMENTS**

Examiner Initials*	Cite No. <sup>1</sup>	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number-Kind Code <sup>2</sup> (if known)			
	144	US- 4,948,843 A	08-14-1990	Roberts et al.	
	145	US- 4,950,587 A	08-21-1990	Roberts et al.	
	146	US- 5,408,109 A	04-18-1995	Heeger et al.	
	147	US- 5,612,221 A	03-18-1997	Simons et al.	
	148	US- 5,869,350 A	02-09-1999	Heeger et al.	
	149	US- 5,881,083 A	03-09-1999	Diaz-Garcia et al.	
	150	US- 5,968,762 A	10-19-1999	Jadamec et al.	
	151	US- 5,990,479 A	11-23-1999	Weiss et al.	
	152	US- 6,280,933 B1	08-28-2001	Glazer et al.	
	153	US- 6,534,329 B1	03-18-2003	Heeger et al.	
	154	US- 6,743,640 B1	06-01-2004	Whitten	
	155	US- 2002/0009728 A1	01-24-2002	Bittner	
	156	US- 2002/0034747 A1	03-21-2002	Bruchez	
	157	US- 2002/0150759 A1	10-17-2002	Jones	
	158	US- 2002/0177136 A1	11-28-2002	McBranch	
	159	US- 2003/0054413 A1	03-20-2003	Kumaraswamy	
	160	US- 2004/0241768 A1	12-02-2004	Whitten	
	161	US- 60/202,647	05-08-2000	Whitten	
	162	US- 60/226,902	08-23-2000	Whitten	

**FOREIGN PATENT DOCUMENTS**

Examiner Initials*	Cite No. <sup>1</sup>	Foreign Patent Document	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages Or Relevant Figures Appear	T <sup>6</sup>
		Country Code <sup>3</sup> Number <sup>4</sup> Kind Code <sup>5</sup> (if known)				
	163	WO 99/35288 A1	07-15-1999	Minnesota Mining and Manufacturing Company		
	164	WO 00/14278 A1	03-16-2000	The Secretary of State for Defence		
	165	WO 00/66790 A1	11-09-2000	The Regents of the University of California		
	166	WO 02/081735 A2	10-17-2002	Infectio Diagnostic (I.D.I.) Inc.		
	167	WO 2004/001379 A2	12-31-2003	The Regents of the University of California		

Examiner  
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Considered

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Substitute for form 1449/PTO  <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  <i>(Use as many sheets as necessary)</i>		<b>Complete if Known</b>	
		Application Number	10/648,945
		Filing Date	August 26, 2003
		First Named Inventor	Guillermo C. Bazan
		Art Unit	1637
		Examiner Name	Riley, Jezia
Sheet 3 of 7	Attorney Docket Number	51871-000006	

NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>
	174	Wang et al., "Size-Specific Interactions Between Single- and Double-Stranded Oligonucleotides and Cationic Water-Soluble Oligofluorenes", Adv. Funct. Mater., June 2003, 13(6), 463-467.	
	175	Stork et al., "Energy Transfer in Mixtures of Water-Soluble Oligomers: Effect of Charge, Aggregation, and Surfactant Complexation", Adv. Mater., March 2002, 14(5), 361-366.	
	176	Leclerc, "Optical and Electrochemical Transducers Based on Functionalized Conjugated Polymers", Adv. Mater., 1999, 11(18), 1491-1498.	
	177	Balakin et al., "Conjugates of oligonucleotides with polyaromatic fluorophores as promising DNA probes", Biosensors & Bioelectronics, 1998, 13, 771-778.	
	178	Ho et al., "Colorimetric and Fluorometric Detection of Nucleic Acids Using Cationic Polythiophene Derivatives", Angew. Chem. Int. Ed., 2002, 41(9), 1548-1551.	
	179	McQuade et al., "Conjugated Polymer-Based Chemical Sensors", Chem. Rev., 2000, 100, 2537-2574.	
	180	Chen et al., "Highly sensitive biological and chemical sensors based on reversible fluorescence quenching in a conjugated polymer", PNAS, October 1999, 96(22), 12287-12292.	
	181	Liu et al., "Effect of Chromophore-Charge Distance in the Energy Transfer Properties of Water-Soluble Conjugated Oligomers", J. Am. Chem. Soc., 2003, 125, 6705-6714.	
	182	Gaylord et al., "DNA detection using water-soluble conjugated polymers and peptide nucleic acid probes", PNAS, August 2002, 99(17), 10954-10957.	
	183	Bronich et al., "Recognition of DNA Topology in Reactions between Plasmid DNA and Cationic Copolymers", J. Am. Chem. Soc., September 2000, 122(35), 8339-8343.	

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		First Named Inventor	Guillermo C. Bazan
		Art Unit	1637
		Examiner Name	Riley, Jezia
Sheet 4	of 7	Attorney Docket Number	51871-000006

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	184	Chen et al., "Tuning the Properties of Conjugated Polyelectrolytes through Surfactant Complexation", J. Am. Chem. Soc., 2000, 122, 9302-9303.	
	185	Gaylord et al., "Water-Soluble Conjugated Oligomers: Effect of Chain Length and Aggregation on Photoluminescence-Quenching Efficiencies", J. Am. Chem. Soc., 2001, 123, 6417-6418.	
	186	Hong et al., "Water-Soluble Oligomer Dimers Based on Paracyclophane: A New optical Platform for Fluorescent Sensor Applications", J. Am. Chem. Soc., 2002, 124, 11868-11869.	
	187	Gaylord et al., "DNA Hybridization Detection with Water-Soluble Conjugated Polymers and Chromophore-Labeled Single-Stranded DNA", J. Am. Chem. Soc., 2003, 125, 896-900.	
	188	Zhou et al., "Fluorescent Chemosensors Based on Energy Migration in Conjugated Polymers: The Molecular Wire Approach to Increased Sensitivity", J. Am. Chem. Soc., 1995, 117, 12593-12602.	
	189	Zhou et al., "Methodology for Enhancing the Sensitivity of Fluorescent Chemosensors: Energy Migration in Conjugated Polymers", J. Am. Chem. Soc., 1995, 117, 7017-7018.	
	190	Hawkins et al., "Incorporation of a fluorescent guanosine analog into oligonucleotides and its application to a real time assay for the HIV-1 integrase 3'-processing reaction", Nucleic Acids Research, 1995, 23(15), 2872-2880.	
	191	Cardullo et al., "Detection of Nucleic Acid Hybridization by Nonradiative Fluorescence Resonance Energy Transfer", Proc. Natl. Acad. Sci. USA, December 1998, 85, 8790-8794.	
	192	Gallot et al., "Poly(L-lysine) containing azobenzene units in the side chains: influence of the degree of substitution on liquid crystalline structure and thermotropic behaviour", Liquid Crystals, 1997, 23(1), 137-146.	
	193	Wang et al., "Biosensors from conjugated polyelectrolyte complexes", PNAS, January 2002, 99(1), 49-53.	

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	194	Liu et al., "Methods for strand-specific DNA detection with cationic conjugation polymers suitable for incorporation into DNA chips and microarrays", PNAS Early Edition, December 2004, p. 1-5	
	195	Vehse et al., "Light Amplification by Optical Excitation of a Chemical Defect in a Conjugated Polymer", Adv. Mater., June 2004, 16(12), 1001-1004.	
	196	Liu et al., "Shape-Adapable Water-Soluble Conjugated Polymers", J. Am. Chem. Soc., 2003, 125, 13306-13307.	
	197	Liu et al., "Interpolyelectrolyte Complexes of Conjugated Copolymers and DNA: Platforms for Multicolor Biosensors", J. Am. Chem. Soc., 2004, 126, 1942-1943.	
	198	Huang et al., "High-Efficiency, Environment-Friendly Electroluminescent Polymers with Stable High Work Function Metal as a Cathode: Green- and Yellow-Emitting Conjugated Polyfluorene Polyelectrolytes and Their Neutral Precursors", J. Am. Chem. Soc., 2004, 126, 9845-9853.	
	199	Service, "DNA Analysis: Microchip Arrays Put DNA on the Spot", The American Association for the Advancement of Science, October 1998, 282(5388), 396-399.	
	200	Southern, "DNA chips: analysing sequence by hybridization to oligonucleotides on a large scale", TIG, March 1996, 12(3), 110-115.	
	201	Epstein et al., "Microarray technology - enhanced versatility, persistent challenge", Current Opinion in Biotechnology, 2000, 11, 36-41.	
	202	Heeger et al., "Making Sense of polymer-based biosensors", PNAS, October 1999, 96(22), 12219-12221.	
	203	Patel et al., "Energy transfer analysis of Fos-Jun dimerization and DNA binding", Proc. Natl. Sci. USA, July 2994, 91, 7360-7364.	

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Sheet 6	of 7	Attorney Docket Number	51871-000006

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	204	Lohse et al., "Fluorescein-Conjugated Lysine Monomers for Solid Phase Synthesis of Fluorescents Peptides and PNA Oligomers", Bioconjugate Chem., 1997, 8, 503-509.	
	205	Smith et al., "The synthesis of oligonucleotides containing an aliphatic amino group at the 5' terminus: synthesis of fluorescent DNA primers for use in DNA sequence analysis", Nucleic Acids Research, 1985, 13(7) 2399-2412.	
	206	Wintermeyer et al., "Fluorescent Derivatives of Yeast tRNA(TM)", Eur. J. Biochem., 1979, 98, 465-475.	
	207	Lipshutz et al., "High density synthetic oligonucleotide arrays", Nature Genetics Supplement, January 1999, 21, 20-24.	
	208	Nilsson et al., "Chip solution detection of DNA hybridization using a luminescent zwitterionic polythiophene derivative", Nature Materials, June 2003, 2, 419-424 (Supplementary Information pp. 1-2).	
	209	Dore et al., "Fluorescent Polymeric Transducer for the Rapid, Simple, and Specific Detection of Nucleic Acids at the Zeptomole Level", J. Am. Chem. Soc., 2004, 126, 4240-4244.	
	210	Ranade et al., "High-Throughput Genotyping with Single Nucleotide Polymorphisms", Genone Research, 2001, 11, 1262-1268.	
	211	Schork et al., "Single nucleotide polymorphisms and the future of genetic epidemiology", Clin. Genet., 2000, 58, 250-264.	
	212	Wang et al., "Optically Amplified RNA-Protein Detection Methods Using Light-Harvesting Conjugated Polymers", Adv. Mater., September 2003, 15(17), 1425-1428.	
	213	Liu et al., "Homogeneous Fluorescents-Based DNA Detection with Water-Soluble Conjugated Polymers", Chem. Mater., 2004, 16, 4467-4476.	

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		Application Number	10/648,945
		Filing Date	August 26, 2003
		First Named Inventor	Guillermo C. Bzan
		Art Unit	1637
		Examiner Name	Riley Jezia
Sheet 7 of 7	Attorney Docket Number	51871-000006	

NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>
	214	Wolcott, "Advances in Nucleic Acid-Based Detection Methods", Clinical Microbiology Reviews, October 1992, 5(4), 370-386.	
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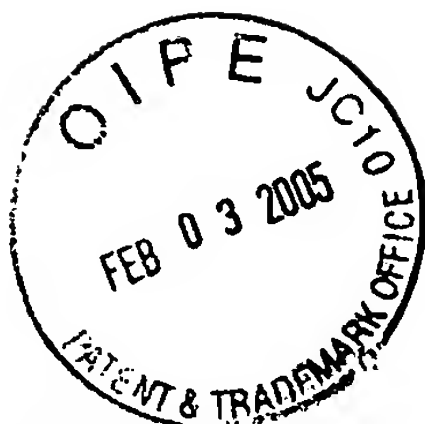
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Application Number	10/648,945
Filing Date	August 26, 2003
First Named Inventor	Guillermo C. Bazan
Art Unit	1637
Examiner Name	Riley, Jezia
Attorney Docket Number	51871-000006

Sheet 1 of 11

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	1	BALAKIN, K.V. et al. Conjugates of oligonucleotides with polyaromatic fluorophores as promising DNA probes <sup>1</sup> ; <i>Biosensors and Bioelectronics</i> (1998) 13:771-778.	
	2	BARDEA, A. et al. Sensing and amplification of oligonucleotide-DNA interactions by means of impedance spectroscopy: a route to a Tay-Sachs sensor; <i>Chem. Commun.</i> (1999) 21-22.	
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Sheet 2

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Filing Date	August 26, 2003
First Named Inventor	Guillermo C. Bazan
Art Unit	1637
Examiner Name	Riley, Jezia
Attorney Docket Number	51871-000006

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	15	CASTRO, A. and WILLIAMS, J.G.K. Single-molecule detection of specific nucleic acid sequences in unamplified genomic DNA; <i>Anal. Chem.</i> (1997) 69:19:3915-3920.	
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First Named Inventor	Guillermo C. Bazan
Art Unit	1637
Examiner Name	Riley, Jezia
Attorney Docket Number	51871-000006

Sheet 3 of 11

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	29	EGHOLM, M. et al. Recognition of Guanine and Adenine in DNA by Cytosine and Thymine Containing Peptide Nucleic Acids (PNA); <i>J. Am. Chem. Soc.</i> (1992) 114:9677-9678.	
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	43	GERSHON, H. et al. Mode of Formation and Structural Features of DNA-Cationic Liposome Complexes Used for Transfection; <i>Biochemistry</i> (1993) 32:7143-7151.	
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Application Number	10/648,945
Filing Date	August 26, 2003
First Named Inventor	Guillermo C. Bazan
Art Unit	1637
Examiner Name	Riley, Jezia
Attorney Docket Number	51871-000006

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	71	LEULLIOT, N. and VARANI, G. Current Topics in RNA-Protein Recognition: Control of Specificity and Biological Function through Induced Fit and Conformational Capture; <i>Biochemistry</i> (2001) 40:27:7947-7956.	
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Sheet 7

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Filing Date	August 26, 2003
First Named Inventor	Guillermo C. Bazan
Art Unit	1637
Examiner Name	Riley, Jezia
Attorney Docket Number	51871-000006

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8

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Art Unit	1637
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<sup>1</sup> Applicant's unique citation designation number (optional). <sup>2</sup> Applicant is to place a check mark here if English language Translation is attached.

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